RF Wireless Weather Station

RAIN-O-MATIC 4-IN-1 – model 100.650

Operating Instuctions

PRONAMIC

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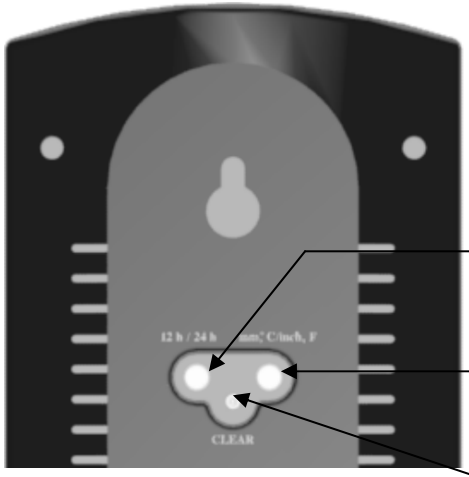
Before connecting, operating or adjusting this product, please read these instructions carefully.
Keep this manual for future reference

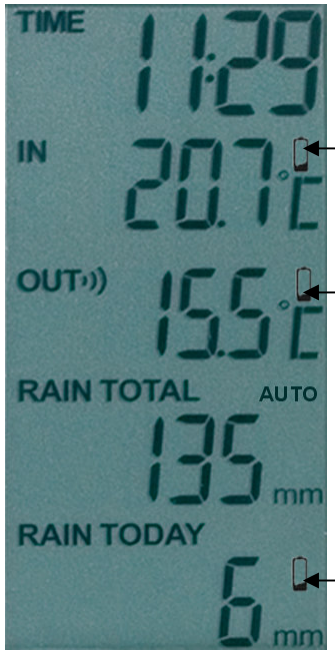


BACK PANEL BUTTONS

PRESS " 12h/24h " BUTTON TO SELECT 12 HOUR (AM or PM icon shown) OR 24 HOUR FORMAT.

PRESS " mm,°C/inch,°F " BUTTON TO SELECT UNITS AS [mm] FOR RAINFALL & [°C] FOR TEMPERATURES OR [inch] FOR RAINFALL & [°F] FOR TEMPERATURES.
ALL DATA ARE AUTOMATICALLY CONVERTED WHEN CHANGING UNITS.

PRESS AND HOLD " clear " BUTTON FOR 5 SECONDS TO RESET VALUE OF RAIN TOTAL TO ZERO.

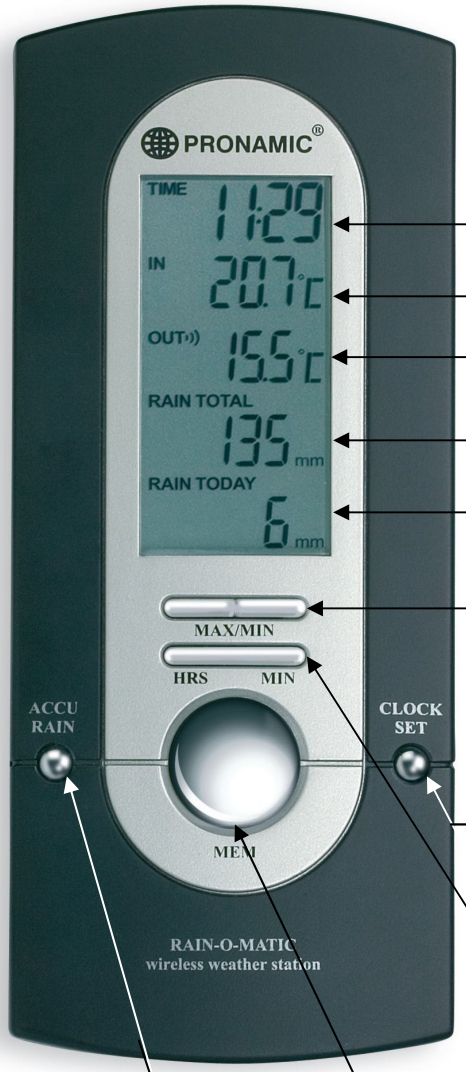


LOW BATTERY INDICATORS

LOW BATTERY ICON APPEARING HERE, MEANS BATTERIES IN DISPLAY UNIT NEEDS CHANGING.

LOW BATTERY ICON APPEARING HERE, MEANS BATTERIES IN REMOTE TEMPERATURE SENSOR NEEDS CHANGING.

LOW BATTERY ICON APPEARING HERE, MEANS BATTERIES IN REMOTE RAINFALL SENSOR NEEDS CHANGING.



FRONT PANEL DISPLAY & BUTTONS

DISPLAY TIME (HRS & MIN)
12/24H CLOCK SELECTABLE

DISPLAY INDOOR TEMPERATURE
(°C/°F) WITH MAX/MIN MEMORY

DISPLAY OUTDOOR TEMPERATURE
(°C/°F) WITH MAX/MIN MEMORY

DISPLAY ACCUMULATED RAINFALL
(mm/inch) FOR SELECTED PERIOD

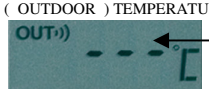
DISPLAY DAILY RAINFALL
(mm/inch)

WHEN MEMORY FUNCTION IS ON. PRESSING "MAX/MIN" TOGGLES TEMPERATURE DISPLAY BETWEEN SHOWING ACTUAL TEMPERATURES, STORED MAXIMUM TEMPERATURES & STORED MINIMUM TEMPERATURES

ACTUAL TEMPERATURES | MAXIMUM TEMPERATURES | MINIMUM TEMPERATURES

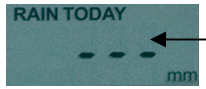
PRESS "HRS" WHILE HOLDING "CLOCK SET" TO SET DESIRED HOUR. (EACH PRESS "HRS" INCREASES DIGIT BY 1. HOLDING "HRS" MAKES SETTING CHANGE RAPIDLY)
PRESS "MIN" WHILE HOLDING "CLOCK SET" TO SET DESIRED MINUTE.

PRESS & HOLD "HRS" FOR 3 SECONDS TO REGISTER REMOTE (OUTDOOR) TEMPERATURE SENSOR.



FLASHING "---" INDICATES REGISTRATION RUNNING

PRESS & HOLD "MIN" FOR 3 SECONDS TO REGISTER REMOTE RAINFALL SENSOR.



FLASHING "---" INDICATES REGISTRATION RUNNING

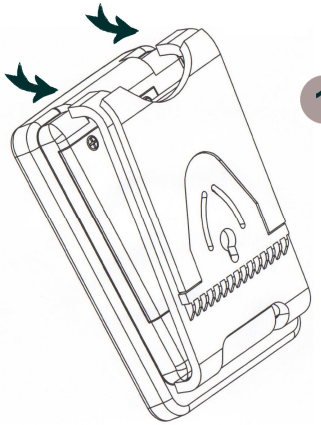
OBS! WHEN SENSOR REGISTRATION IS RUNNING, ALL OTHER BUTTON FUNCTIONS IS DISABLED

PRESSING AND HOLDING "ACCU RAIN" FOR 5 SECONDS MAKES "AUTO" ICON APPEAR OR DISAPPEAR IN DISPLAY.
WHEN "AUTO" ICON IS ON, THE VALUE OF "RAIN TODAY" WILL AOTOMATICALLY ADD TO THE VALUE OF " RAIN TOTAL" AT 00:00 (24 h FORMAT) OR PM12:00 (12 h FORMAT), WITH THE VALUE OF "RAIN TODAY" CLEARING TO ZERO.
WHEN "AUTO" ICON IS OFF, PRESSING "ACCU RAIN" WILL ADD THE VALUE OF "RAIN TODAY" TO "RAIN TOTAL"), WITH THE VALUE OF "RAIN TODAY" CLEARING TO ZERO.

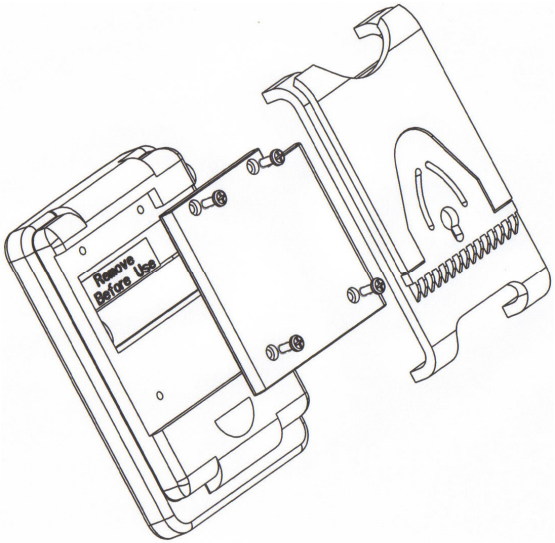
AUTO ICON

PRESSING "MEM" TOGGLES MEMORY FUNCTION FOR TEMPERATURES ON/OFF.
WHEN MEMORY FUNTION IS TURNED OFF, STORED MAX/MIN TEMPERATURES IS ERASED

QUICK SETUP



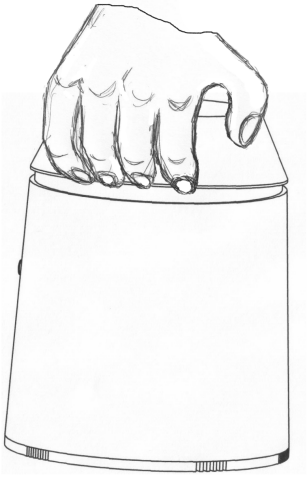
1 LIFT OF BRACKET STAND FOR REMOTE TEMPERATURE SENSOR BY RELEASING THE BOTTOM TWO FIXING SNAPS

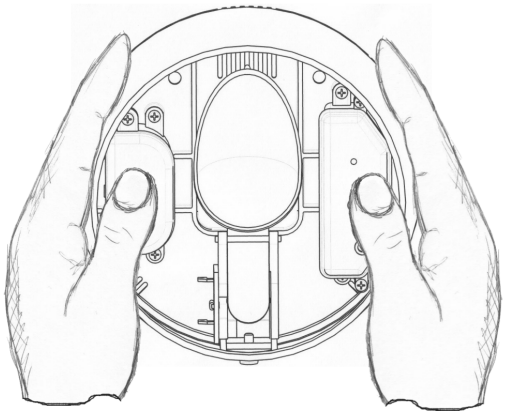


2 USE A SMALL PHILIPS SCREWDRIVER TO REMOVE SCREWS ON THE BATTERY COVER.
D0 NOT REMOVE BATTERY INSULATION PAPER YET !

3 PLACE THUMB INSIDE TOP FUNNEL OF RAINSENSOR AND PRESS OUTWARDS TO LOOSEN TOP FUNNEL AS SHOWN IN ILLUSTRATION.

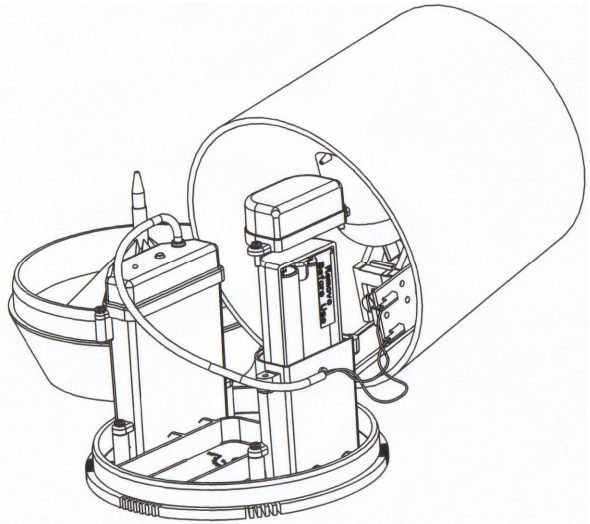
4 REMOVE TOP FUNNEL FROM RAINSENSOR.

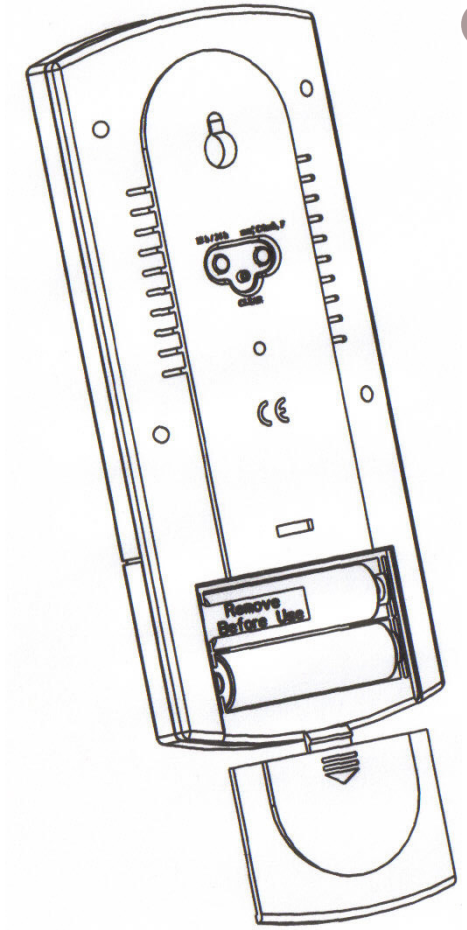




5 PLACE THUMBS ON TOP OF BATTERY & PCB BOXES AND PRESS DOWN TO SEPARATE SENSOR HOUSING FROM BOTTOM PLATE.
BE CAREFULL NOT TO DAMAGE WIRES BY DOING THIS.

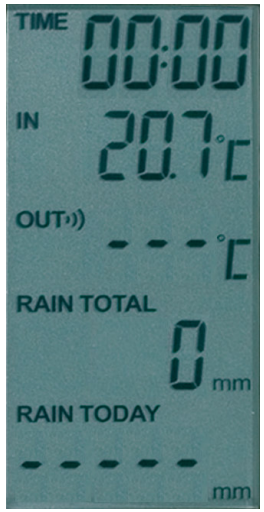
6 USE A SMALL PHILIPS SCREWDRIVER TO REMOVE SCREWS ON THE BATTERY BOX COVER. AND OPEN BATTERY BOX.
D0 NOT REMOVE BATTERY INSULATION PAPER YET !





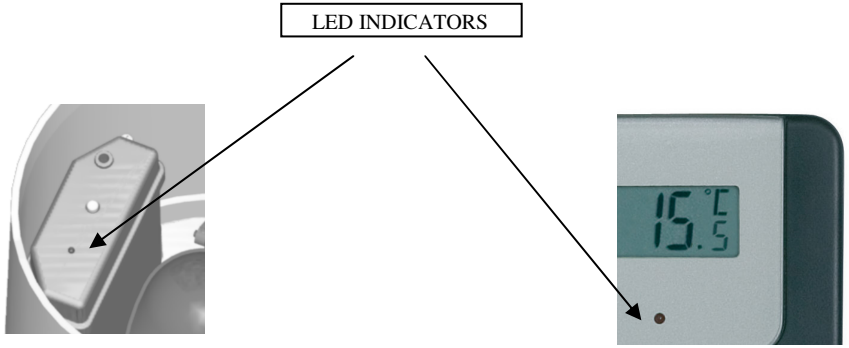
7

OPEN BATTERY BOX ON DISPLAY UNIT BY SLIDING DOWN BATTERY BOX COVER.
REMOVE BATTERY INSULATION PAPER.
THIS SHOULD TURN ON THE DISPLAY LOOKING AS SHOWN BELOW WITH FLASHING "----" IN LINE 3 (OUTTEMPERATURE) AND LINE 5 (RAIN TODAY) INDICATITING THAT THE UNIT IS SEARCHING FOR REMOTE SENSORS TO REGISTER
THE UNIT WILL SEARCH FOR REMOTE SENSORS TO REGISTER FOR 3 MIN.



8

NOW YOU CAN REMOVE THE BATTERY INSULATOR PAPER FROM THE REMOTE SENSORS.
WHEN THE TEMPERATURE CHANGE EQUALS OR IS OVER 0.5 (WITH REFERENCE TO LAST READING) THE TEMPERATURE SENSOR WILL TRANSMIT READINGS TO THE RECEIVING UNIT AT 30 SECOND INTERVALS.
WHEN THE RAINFALL CHANGES WITH AN INTERVAL OF OVER OR EQUAL TO 30 SECONDS THE RAINFALL SENSOR WILL TRANSMIT READINGS TO THE RECEIVING UNIT. IF THERE IS NO RAINFALL THE SENSOR WILL TRANSMIT TO THE RECEIVING UNIT AT 5-8 MINUTE INTERVALS.
IF YOU PRESS THE "TX" BUTTON ON THE SENSORS WITH THE TIP OF A BALL PEN OR SIMILAR YOU CAN FORCE THEM TO TRANSMIT A SIGNAL TO THE RECEIVING UNIT.
THE RED LED INDICATORS ON THE SENSORS WILL LIGHT UP WHEN THE SENSOR IS TRANSMITTING.

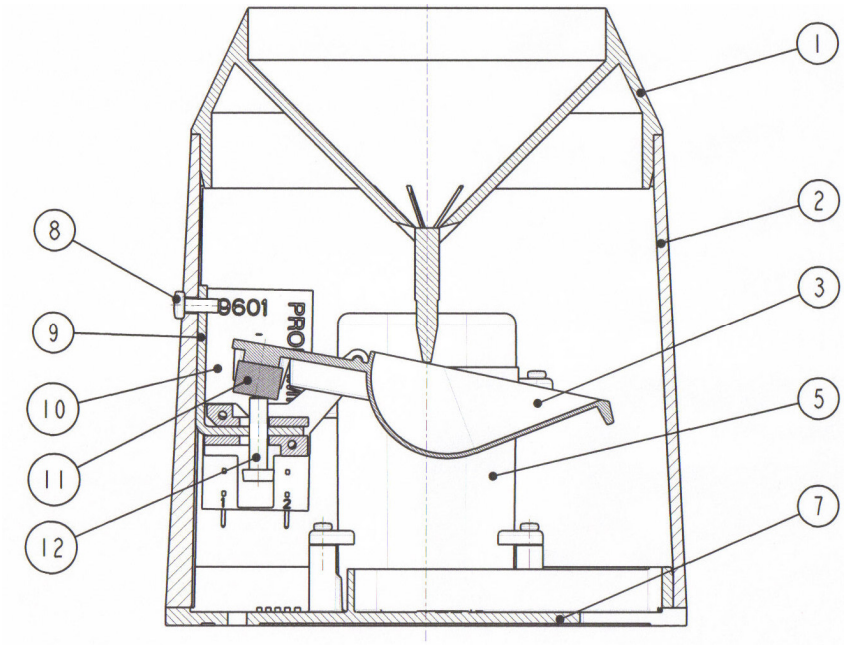


IF THE UNIT FAILS TO REGISTER ONE OR BOTH SENSORS WITHIN THE 3 MIN. YOU CAN FORCE IT TO SEARCH AGAIN.
PRESS AND HOLD "HRS" BUTTON FOR 3 SEC TO MAKE UNIT SEARCH FOR TEMPERATURE SENSOR.
PRESS AND HOLD "MIN" BUTTON FOR 3 SEC TO MAKE UNIT SEARCH FOR RAIN SENSOR.
OBS! WHILE UNIT IS SEARCHING FOR SENSORS, ALL OTHER BUTTON FUNCTIONS IS DISABLED.

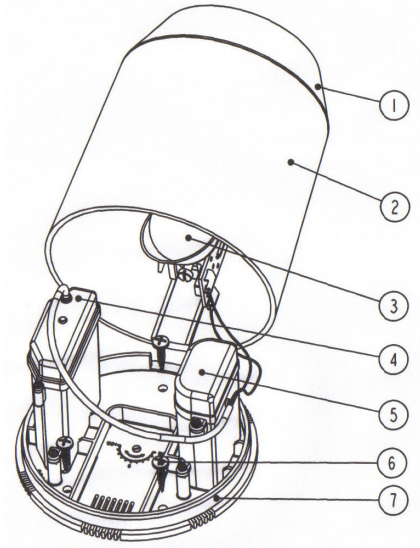
9

WHEN THE UNIT HAS FOUND THE REMOTE SENSORS YOU CAN MOUNT THE BATTERY COVERS FOR ALL UNITS AGAIN.
WHEN MOUNTING RAIN SENSOR HOUSING ON BOTTOM PLATE BE CAREFULL TO PLACE WIRES SO THEY ARE NOT DAMAGED AND SO THAT THE TIPPING SPOON IN THE SENSOR CAN TIP FREELY.
NOW YOU CAN PROCEED TO SETTING THE TIME AND GETTING AQUA??? WITH THE BUTTON FUNCTIONS ON YOUR WIRELESS WEATHERSTATION. FOR INSTRUCTIONS ON THIS SE CHAPTER X.X & X.Y

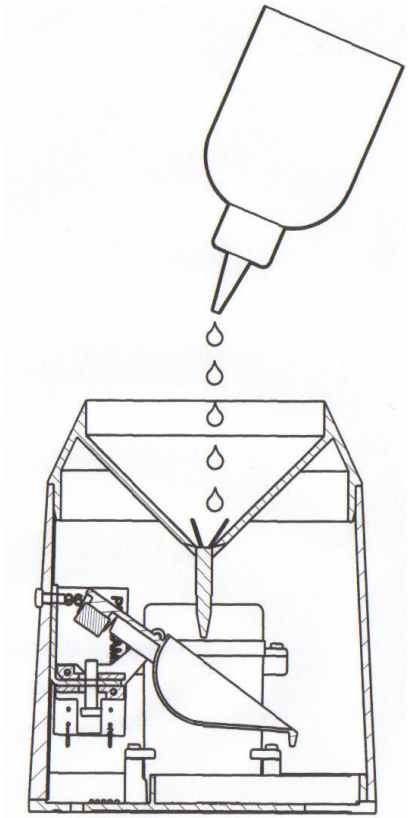
RAIN GAUGE PARTS



12	Adjusting Screw	PA5
11	Magnet	
10	Switch PCB	
9	Angle Bracket	Stainless Steel
8	Screw	Stainless Steel
7	Bottom Plate	Styrosun
6	Mounting Screw	Stainless Steel
5	Battery Box	ABS
4	Transmitter Box	ABS
3	Spoon	PA5
2	Housing	Styrosun
1	Funnel	Styrosun
Pos	Name	Material

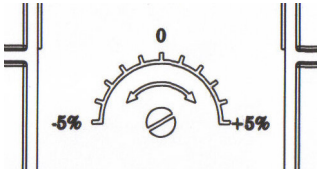


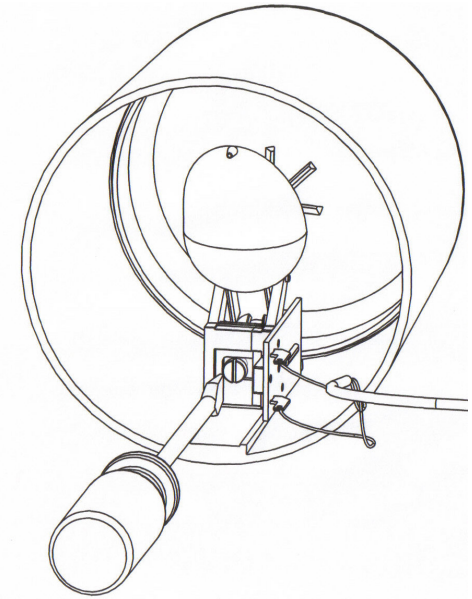
ADJUSTING THE RAIN GAUGE



THE RAIN GAUGE HAS BEEN ADJUSTED FROM THE FACTORY BUT CAN EASILY BE CHECKED AND READJUSTED.
TO DO THIS POUR 0.1 LITRE OF WATER SLOWLY (OVER 5 MINUTES) THROUGH THE FUNNEL.
THE DISPLAY SHOULD NOW SHOW 20 mm AS THE COLLECTING AREA OF THE GAUGE IS 50 cm².

ANY NECESARRY ADJUSTMENT CAN BE DONE AS FOLLOWS:
DISMANTLE THE GAUGE AS DESCRIBED IN CHAPTER X.X . WITH A SCREW DRIVER SET THE ADJUSTMENT SCREW TOWARDS + OR - THE ADJUSTMENT SCREW REGULATES THE QUANTITY OF WATER WHICH MAKES THE “SPOON” TIP.

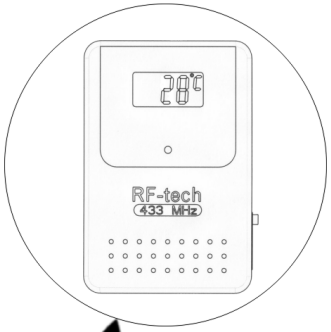


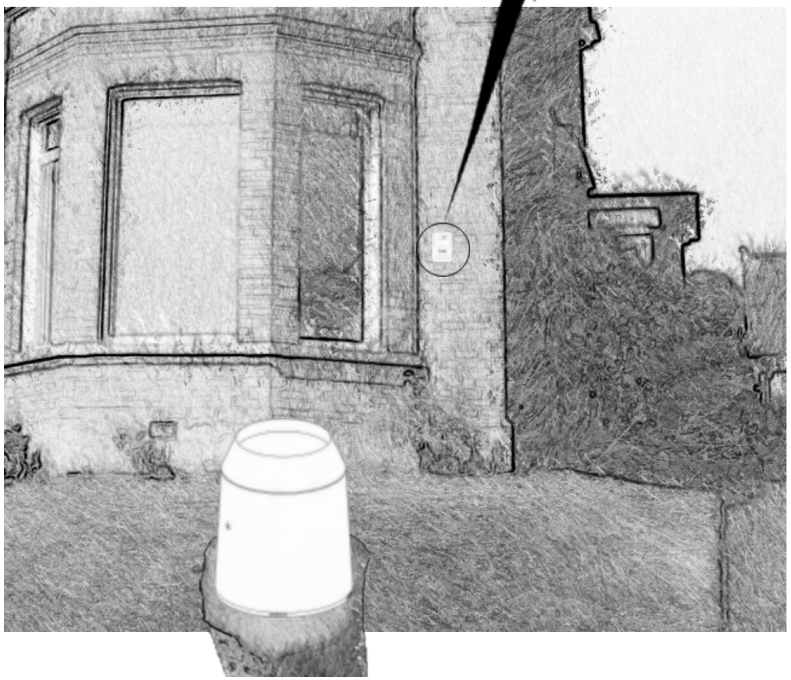


¼ REVOLUTION OF THE ADJUSTMENT SCREW INCREASES OR DECREASES THE COUNTED VALUE BY APPROXIMATELY 5% AS SHOWN IN BOTTOM PLATE DRAWING. AFTER ADJUSTMENT CHECK AGAIN BY POURING WATER THROUGH THE GAUGE

PLACING & MOUNTING THE REMOTE SENSORS

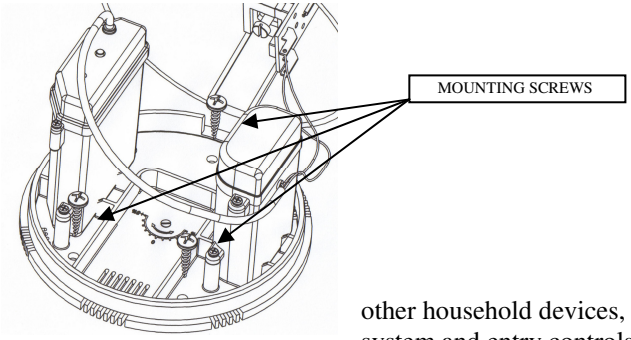
THE REMOTE SENSOR FOR OUTDOOR TEMPERATURE MUST BE PLACED OUTSIDE IN A SHADY PLACE E.G. UNDER ROOF EAVES.



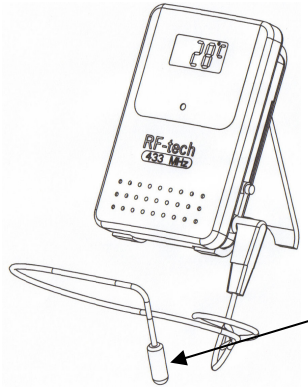


THE RAINNGAUGE MUST BE PLACED OUTSIDE IN AN OPEN AREA WELL FREE OF WALLS AND TREES ETC. WHICH COULD INFLUENCE ON THE PRECISION OF RAIN MEASUREMENT, AND TO AVOID LEAVES AND SIMILAR TO FILL THE COLLECTING FUNNEL.

THE REMOTE SENSORS ARE TESTET TO HAVE A MINIMUM TRANSMISSION RANGE OF 30 M IN OPEN AIR. THIS WILL NATURALLY BE REDUCED WHEN THE SIGNAL HAS TO PASS THROUGH OBSTACLES? AS WALLS AND FENCES ETC. SO PLEASE TAKE THIS INTO CONSIDERATION WHEN DECIDING WHERE TO PLACE THE SENSORS.
FIRST DECIDE IN WHICH ROOM IN YOUR HOUSE YOU WOULD LIKE THE RECEIVING UNIT WITH THE DISPLAY TO BE PLACED AND THEN SEEK OUT SUITABLE LOCATIONS FOR THE REMOTE SENSORS.
REMEMBER THAT THE TEMPERATURE SENSOR MUST BE PLACED IN THE SHADOW TO GIVE A CORRECT READING FOR THE OUTDOOR TEMPERATURE, IF IT IS POSSIBLE TO PLACE IT UNDER THE ROOF EAVES THIS WOULD BE EXELLENT.
THE RAINGAUGE SHOULD PREFERABLY BE PLACED IN AN OPEN AREA FREE OFF WALLS AND TREES WHICH COULD INFLUENCE ON THE PRECISION OF THE RAIN MEASUREMENT, BUT STILL IT WOULD BE AN ADVANTAGE IF THE LOCATION IS NOT TO WINDY.
WHEN YOU HAVE FOUND A SUITABLE LOCATION FOR THE REMOTE SENSORS, OBSERVE THE DISPLAY FOR THE SENSORS AFTER 35 MINUTES BEFORE SCREWMOUNTING THE SENSORS. IF THE DASH ICON (---) IS DISPLAYED THE SIGNAL HAS BEEN LOST. TRY ROTATING THE SENSOR IN 45° STEPS, WAIT FOR AT LEAST 3 MINUTES AFTER CHANGING EACH POSITION. OBSERVE THE RECEIVING CHANNEL DISPLAY ON EACH POSITION TO DETERMINE THAT THE REMOTE SENSOR DISPLAY HAS BEEN RESTORED IF NOT THE REMOTE SENSOR MUST BE MOVED CLOSER TO THE RECEIVING UNIT.
WHEN THE TRANSMISSION IS O.K. YOU CAN MOUNT THE REMOTE SENSORS TO THEIR POSITIONS BY WOOD SCREWS.



Signals from other household devices, such as bell, home security system and entry controls, may interfere with those of this product and cause temporary reception failure. This is normal and it doesn't affect the general performance of the product. The transmission and reception of readings will resume once the interference recedes.



IF THE OUTDOOR TEMPERATURE DROPS BELOW -5°C THE CAPACITY OF THE BATTERIES DROPS DRASTICALLY AND THEY MIGHT NOT BE ABLE TO SUPPLY ENOUGH POWER TO THE TRANSMITTER TO SEND SIGNALS.
IN THIS CASE YOU CAN TAKE THE TEMPERATURE SENSOR INSIDE, MOUNT THE WIRED SENSOR AND PUT THIS OUTSIDE THROUGH A WINDOW OR SIMILAR.

DESCRIPTION

The wireless weather station RAIN-O-MATIC 4-in-1 combines the following electronic functions in one instrument: Clock-function, indoor temperature measuring, outdoor temperature measuring and rainfall measuring with build in memory for all functions.
The outdoor temperature and rainfall measurement is carried out by remote sensors with build in transmitters for transferring the data wireless to the receiving unit to avoid wires being lead out of the house.
The rain sensor which is self emptying and 100% frost proof registers the rainfall in mm (or 1/10 of an inch) . The rain is collected in a funnel with a collecting area of 50 cm² and lead to a tipping spoon arrangement balanced by a magnet. When the spoon is filled with a quantity of water that equals 1 mm of rainfall the spoon tips and this is registered by a reed switch and the signals are stored in a microcontroller that is build into the sensor. At 30 second intervals the microcontroller transmits the rain data to the receiving unit.
The housing parts of the rain gauge (funnel, housing and bottom plate) are made in Styrosun which is a weather able, high-impact, styrenic polymer specifically designed for use in outdoor applications. Resistant to sunlight and frost Styrosun maintain significant physical properties after weathering.
The rain gauge microcontroller as well as batteries is placed in fully watertight boxes.
The indoor temperature sensor is placed inside the main display unit.

TROUBLESHOOTING FOR LOSING SIGNALS

If without obvious reasons the display for a particular channel suddenly goes (—) dash, check:

- The remote unit of that channel is still in place.
- The batteries of both the receiving unit and the remote unit. Replace as necessary.
- The transmission is within range and path is clear of obstacles and interference. Shorten the distance when necessary.
- Signals from other household devices, such as bell, home security system and entry controls, which may interference with those of this product and cause the temporary reception failure. This is normal and it doesn't affect the general performance of the product. The transmission and reception of temperature reading will resume once the interference recedes.

PRECAUTIONS

- Do not clean the units with abrasive or corrosive compound, which may scratch the plastic parts and corrode the electronic circuits.
- Do not subject the unit to excessive force shock, dust, temperature or humidity, which may result in malfunction, shorter electronic life span, damaged batteries and distorted parts.
- Do not temper with these unit's internal components. Doing so will invalidate the warranty on the unit and may cause unnecessary damaged battery and distorted parts.
- Do not subject the units to excessive exposure to direct sunlight although the remote sensor has splash proof design, never immerse it in water.
- Always read the user's manual thoroughly before operating the unit.

SPECIFICATIONS

Recommended temperature range.
Receiving unit : -5°C to +60°C (+23°F to +140°F)
Remote rain sensor : -5°C to +60°C (+23°F to +140°F)
Remote temperature sensor : -5°C to +60°C (+23°F to +140°F)
Measuring range with wired sensor inserted and remote unit moved inside down to :-30°C (-22°F)
Transmission range : Maximum 30 meters open air
Measuring accuracy.
Temperature measurement : ±0.5°C (±0.9°F)
Rain measurement : ±2%
Batteries
Receiving unit : DC 1.5V size AA x 2 pcs
Remote rain sensor : DC 1.5V size AA x 2 pcs
Remote temperature sensor : DC 1. 5V size AAA x 2pcs
Battery life
Receiving unit : Typical 8 months
Remote rain sensor : Typical 6 months
Remote temperature sensor : Typical 6 months